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SELF-CONTAINED TENNIS BALL STORAGE CONTAINER AND PRESSURIZING DEVICE

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ABSTRACT OF THE DISCLOSURE

Self-contained or combined tennis ball storage container and pressurizing device. One embodiment is in the form of an attachment for a conventional tennis ball can having a plurality of filler elements occupying most of the air space around the balls placed in the container to form a ball occupying chamber, with a compression cylinder fitted in airtight relation over the top of said container and containing a collapsible air bladder, and with toggle linkages for telescoping the compression cylinder over the container to force air from the bladder into the container, thus pressurizing the ball occupying chamber. A second embodiment includes a cylindrical container having filler elements to fill the air space around the balls, a collapsible bellows removably fastened in airtight relation over the top of the container, and two latches for fastening the compressed bellows to the sides of the container. A third embodiment includes a container in which the balls are placed in a generally horizontal plane, the air space around the balls being filled with fillers to define a ball occupying chamber, a container end closure removably fastened to the container in airtight relation, and a screw actuated bellows fastened to the container end closure for pressurizing the ball occupying chamber. A fourth embodiment includes a container having a bottom half in the configuration of three semi-spherical cups in a generally horizontal plane, a top half removably fastened in airtight relation to the bottom half and having the configuration of three inverted semi-spherical cups, and a pump in the form of a resilient disk integrally formed on said top half of the container and being provided with check valve means for retaining air pumped into said ball occupying chamber.

Background of the invention

Field of the invention.—This invention pertains to apparatus for maintaining pressure of tennis balls and the like and, more particularly, relates to a self-contained tennis ball storage container and air pressurization device.

Description of the prior art.—Tennis balls are resilient due, in part, to internal pressurization by air or gas of an amount sufficient to obtain a specified amount of rebound when the balls are dropped on a hard surface. The internal pressurizing air escapes after a period of time due to the differential between the internal pressure of the ball and atmospheric pressure causing diffusion of the air outwardly through the ball casing. In addition, some balls tend to "grow" in size due to internal pressure causing them to be outside of specified measurements. New balls are sold in pressurized cans so that there will be no pressure differential and the balls will retain their internal pressure and maintain their specified size. Once the can is opened, however, and the pressurized environment is lost, the balls tend to no longer maintain their size and internal pressure.

One solution to this problem has been to store the balls after play in a container that is pressurized by an external source. One such device is shown, for example, in the patent to Miller 2,012,283. In this patent the container is pressurized to a magnitude approximately equal to the

internal pressure of the balls. This device, however, requires pressure from an external source and thus necessitates the inconvenience of stopping at a service station or carrying an air pump with the other tennis equipment. In addition, this type of device is generally expensive to manufacture since valving mechanisms are required to retain the air in the container.

Summary of the invention

Applicant's invention pertains to self-contained apparatus for storing tennis balls in a pressurized environment and is an improvement on earlier containers in that the pressure source is an integral part of the container. In other words, the containers are "self-pressurizing." In this manner the tennis player is able to remove the balls for play and immediately replace them in a pressurized environment without the need for additional equipment. Furthermore, several embodiments of the invention do not require valving mechanisms to maintain the air in the container. These embodiments take advantage of the unique arrangement of a single or partial stroke air pressurization means and a container having fillers or being otherwise configured to form generally spherical ball occupying chamber means such that a minimal amount of air is needed to obtain the desired magnitude of pressurization.

Brief description of the drawings

FIG. 1 is an isometric, broken away view of one form of self-contained tennis ball storage container and pressurizing apparatus embodying the invention.

FIG. 2 is a longitudinal vertical section of the apparatus shown in FIG. 1.

FIG. 3 is an exploded isometric view of a second form of apparatus embodying the invention.

FIG. 4 is a vertical section of the apparatus shown in FIG. 3.

FIG. 5 is an isometric view of a third form of apparatus embodying the invention.

FIG. 6 is a vertical section of the apparatus shown in FIG. 5.

FIG. 7 is an isometric, broken away view of still a further form of apparatus embodying the invention.

Description of the preferred embodiments

The embodiment shown in FIGS. 1 and 2 is in the form of an attachment for conventional cylindrical cans of the type in which tennis balls are commonly sold. The can or container means is indicated generally by the reference numeral **10** and includes a closed bottom **12** and an open top **14**. Surrounding the lower half of the can is an attachment mechanism **16** which comprises an encircling band **18** and a pair of diametrically opposed, longitudinally extending clips **20**, each having a U-shaped end **22** that fits around the lower rim of the can. The clips **20** are pivotally attached to the band **18** by pivot pins **24** that are mounted in apertured ears **26** integrally formed on the band.

Air pressurization means including a compression cylinder **28** is connected to the attaching mechanism **16** in a manner to be later described and includes a closed upper end **30** and a cylindrical side wall **32** that terminates at its lower end in a radially inwardly directed flange **34**. A closure disk **36** is carried in the compression cylinder and when disengaged from the tennis ball can **10** is retained in the cylinder by the flange **34**. The outer peripheral portion of the disk terminates in a downwardly opening channel **38** in which is seated a rubber or like seal ring **40**. As can be readily seen in FIG. 2, the midpoint of the channel is approximately aligned with the lip of the open end **14** of the can **10** such that the ring **40** may effectively seal the open end of the can.